UPPER YORK RIVER WATERSHED ORANGE COUNTY

Project Location and Background

The Upper York watershed is located in Orange, Louisa, and Spotsylvania Counties, Virginia. Its subwatersheds Mountain Run and Beaver Creek flow south and drain into the North Anna River. Pamunkey Creek and Terry's Run drain directly into Lake Anna. The 91,546-acre Upper York watershed is primarily forested (61%), with pasture/hayland as the second most predominant land use (30%). Cropland constitutes approximately 7% of the watershed, while residential and water/wetland land uses each constitute approximately 1% of the total watershed area.

Beaver Creek, Mountain Run, Pamunkey Creek, Plentiful Creek, and Terry's Run were initially placed on Virginia's *1998 Section 303(d) Total Maximum Daily Load (TMDL) Priority List and Report* due to violations of the State's Water Quality Standard for fecal coliform bacteria. Goldmine Creek was added to the List in 2002. A TMDL study was completed for the impaired stream segments in August 2005; a TMDL implementation plan was completed for the Upper York Watershed in August 2011 and approved by EPA in January 2012. An implementation project for the four watersheds in Orange County (not including Goldmine or Plentiful Creeks) commenced in July 2012.

Implementation Highlights

This implementation project is administered by the Culpeper Soil and Water Conservation District (CSWCD), which was contracted to provide technical assistance and educational outreach to farmers and homeowners for agricultural and residential BMP implementation within Orange County portions of the TMDL watershed. The table on the right shows BMPs implemented in the watersheds since the project began in 2012 and overall implementation goals for the IP. (*continued on page 2*)

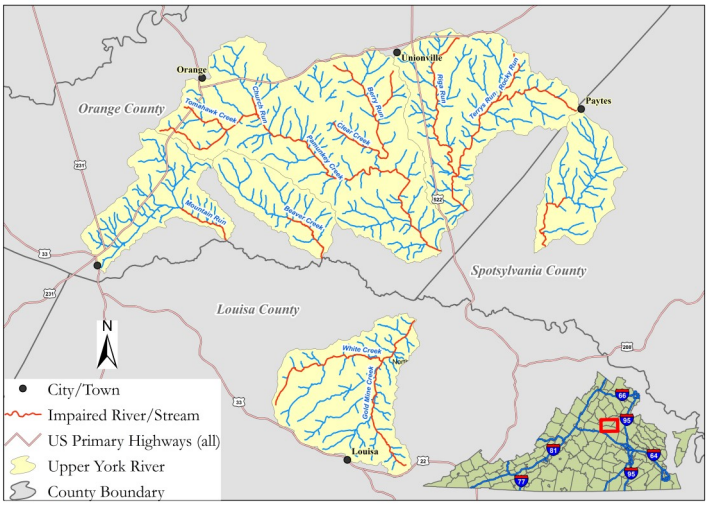


Table 1: Upper York River Watershed BMP Summary: Jan. 2012 – June 2020

Control Measure	Units	Goal	Installed*	%
Agricultural				
Stream Exclusion Fencing	F	744,480	314,865	42
Stream Exclusion Fencing	S	320	53	17
Streamside Fencing Maintenance	F	N/A	143,010	N/A
Reforestation	A	336	30	9
Small Grain Cover Crops	A	346	7,098	2,051
Harvestable Cover Crops	A	N/A	356	N/A
Pasture Management	A	26,966	6,957	26
Residential Septic				
Septic Tank Pump-out	S	514	189	37
Septic System Repair	S	302	26	9
Septic System Instal-lation	S	152	35	23
Alternative Waste Treatment System	S	50	1	2

A = Acres, F = Linear Feet, S = System; Note: BMP counts only include 319-funded and state VACS. NRCS EQIP funded practices are not included. *Corrections have been made to numbers of installed BMPs provided in previous annual reports.

The Virginia Nonpoint Source Management Program: The Virginia NPS Management Program is managed by the Virginia Department of Environmental Quality (DEQ) and is funded, in part, through grants from the U.S. Environmental Protection Agency, under the Clean Water Act Section 319(h). For more information regarding Virginia's Nonpoint Source Management Program, please visit us on the web at: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/NonpointSourcePollutionManagement.aspx . An electronic copy of this report can be found here: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLImplementation/TMDLImplementationProjects.aspx General NPS Program questions? email: npsgrants@deq.virginia.gov.

Implementation Highlights— Continued

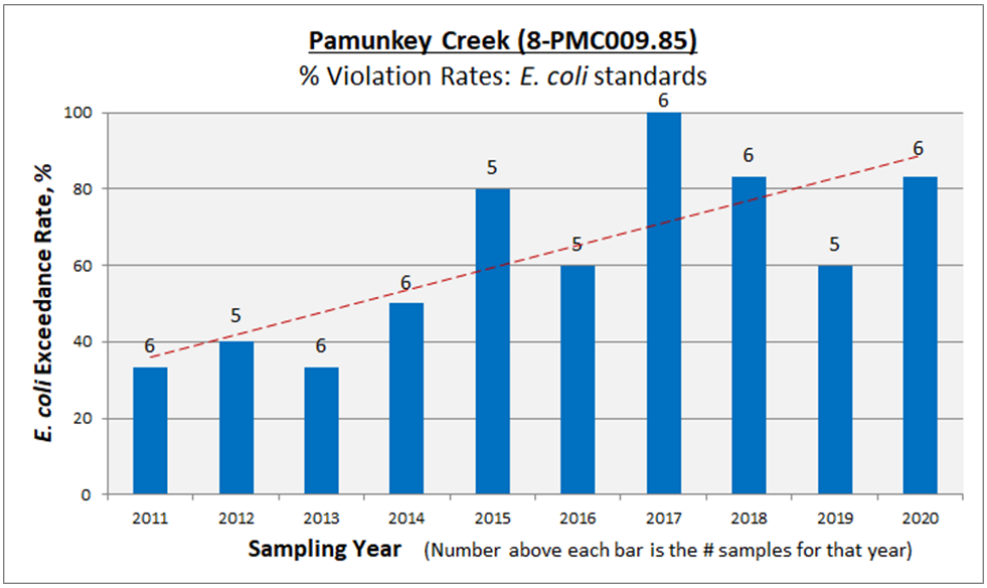
Over the years, outreach efforts for the project have included numerous meetings, newspaper articles, mailings to watershed landowners, and presentations to community organizations. Between July 2019 and June 2020, four livestock stream exclusion systems were established, totaling 28,865 linear feet of fencing. In addition, maintenance work was completed on 9,800 feet of stream fencing and 1,061 acres were planted under small grain and mixed cover crop for nutrient and residue management. Under the residential septic BMP program, 12 septic tank pump-outs, three septic system repairs, eight conventional septic system replacements, and one alternative on-site septic system installation were completed between July 2019 and June 2020. Bacteria reductions resulting from BMP installations are summarized in Table 2 below.

Period	Pathogens (Coliform) (CFU)
Oct. 2011—June 2020	2.19 E+16

Table 2: Pollution Reductions for Upper York River Watershed

Water Quality Monitoring Results

Water quality data collected by DEQ for the period of 2011 through 2020 were analyzed to determine *E. coli* violation rates in the project area relative to the water quality standard of 235 cfu/100 mL. The bar graph below shows the percent violation rate for samples collected annually at monitoring station 8-PMC009.58, located near the mouth of Pamunkey Creek (a subwatershed of the Upper York River Watershed). The number of samples collected each year is shown above each bar. The exceedance rate of the bacteria water quality standard has been very high in recent years despite continued implementation activities within this IP watershed. Field reconnaissance of remaining sources of bacteria upstream of this station is critically important, and continued BMP installations and monitoring of water quality over a longer period of time is needed to achieve and document water quality goals.



Graph 1: *E.coli* data for Pamunkey Creek (Station 8-PMC009.85), 2011-2020

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